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EXAMINER

THANGAVELU, KANDASAMY

ART UNIT PAPER NUMBER

2123

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/032,789

Applicant(s)

WALTHER ET AL.

Examiner

Kandasamy Thangavelu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-20 of the application have been examined.

Drawings

2. The drawings submitted on December 27, 2001 are accepted.

Specification

3. The disclosure is objected to because of the following informalities:

Page 2, Lines 23-24, "The manual editing of the revised may be cumbersome, error-prone and time-consuming" appears to be incorrect and it appears that it should be "The manual editing of the revised netlist may be cumbersome, error-prone and time-consuming".

Page 10, Lines 24-25, "The lexical analyzer 302 is a component of the netlist compiler 206 compiler that reads the netlist 202" appears to be incorrect and it appears that it should be "The lexical analyzer 302 is a component of the netlist compiler 206 that reads the netlist 202".

Appropriate corrections are required.

Claim Rejections - 35 USC § 101

4. Claim 20 is rejected under 35 U.S.C. 101 because the claimed inventions are directed to non-statutory subject matter.

4.1 Independent claim 20 recites a computer-readable medium comprising program instructions. The limitations recited in claim contain steps implemented in the computer program which are not statutory subject matter. To be statutory, the computer readable medium should include program instructions which when executed in a computer performs a process comprising the steps included in the limitations.

4.2 Claim 20 would be statutory if it is rewritten as:

A computer-readable medium comprising program instructions which when executed on a computer perform a process for editing a netlist, comprising:

receiving a netlist comprising a set of netlist modules;

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

6. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

7. Claims 1-5, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baxter et al.** (U.S. Patent 6,625,787) in view of **Takeyama et al.** (U.S. Patent Application 2002/0083398), and further in view of **Lee et al.** (U.S. Patent Application 2001/0138817).

7.1 **Baxter et al.** teaches method and apparatus for timing management in a converted design. Specifically, as per claim 1, **Baxter et al.** teaches a method for editing a netlist (CL9, L3-17; Fig. 5A, Item 512).

Baxter et al. does not expressly teach providing a netlist comprising a set of netlist modules. **Takeyama et al.** teaches providing a netlist comprising a set of netlist modules (Page 12, Para 0185 and Para 0186), because the circuit information is written in a hardware description language for each processed unit and placed in the circuit information database, for each hierarchical layer; each hierarchical layer has a netlist associated and the logic gates contained therein (Page 12, Para 0185 and Para 0186). It would have been obvious to one of

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ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Takeyama et al.** that included providing a netlist comprising a set of netlist modules. The artisan would have been motivated because the circuit information would be written in a hardware description language for each processed unit and placed in the circuit information database, for each hierarchical layer; each hierarchical layer would have a netlist associated and the logic gates contained therein.

Baxter et al. does not expressly teach creating a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist. **Lee et al.** teaches creating a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist (Page 3, Para 0035; Fig. 2, Item 214), because that allows specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist (Page 3, Para 0035). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Lee et al.** that included creating a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist. The artisan would have been motivated because that would allow specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist.

7.2 As per claim 2, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim

1. **Baxter et al.** does not expressly teach that the changes module contains a modifier associated with at least one of the netlist modules, the modifier indicating a change in the associated netlist module or instantiation of a module. **Lee et al.** teaches that the changes module contains a modifier associated with at least one of the netlist modules, the modifier indicating a change in the associated netlist module or instantiation of a module (Page 3, Para 0035; Fig. 2, Item 214), because that allows specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist (Page 3, Para 0035). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Lee et al.** that included the changes module containing a modifier associated with at least one of the netlist modules, the modifier indicating a change in the associated netlist module or instantiation of a module. The artisan would have been motivated because that would allow specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist.

7.3 As per claim 3, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim

1. **Baxter et al.** does not expressly teach that the netlist modules comprise a hardware description language netlist. **Takeyama et al.** teaches that the netlist modules comprise a hardware description language netlist (Page 12, Para 0185 and Para 0186), because the circuit information is written in a hardware description language for each processed unit and placed in the circuit information database, for each hierarchical layer; each hierarchical layer has a netlist

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associated and the logic gates contained therein (Page 12, Para 0185 and Para 0186). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Takeyama et al.** that included the netlist modules comprising a hardware description language netlist. The artisan would have been motivated because the circuit information would be written in a hardware description language for each processed unit and placed in the circuit information database, for each hierarchical layer; each hierarchical layer would have a netlist associated and the logic gates contained therein.

7.4 As per claim 4, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim 1. **Baxter et al.** does not expressly teach that the changes module comprises a file separate from the netlist. **Lee et al.** teaches that the changes module comprises a file separate from the netlist (Page 3, Para 0035; Fig. 2, Items 204 and 214), because that allows specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist (Page 3, Para 0035). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Lee et al.** that included the changes module comprising a file separate from the netlist. The artisan would have been motivated because that would allow specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist.

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7.5 As per claim 5, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim 1. **Baxter et al.** does not expressly teach using the changes module to modify at least one of the netlist modules. **Lee et al.** teaches using the changes module to modify at least one of the netlist modules (Page 3, Para 0035; Fig. 2, Items 204 and 214), because that allows specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist (Page 3, Para 0035). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Lee et al.** that included using the changes module to modify at least one of the netlist modules. The artisan would have been motivated because that would allow specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist.

Baxter et al. does not expressly teach parsing the netlist to create representational netlist comprising an array of objects, each object containing information about an associated element of the netlist; changing the representational netlist according to the set of changes; and converting the representational netlist into a hardware description language.. **Takeyama et al.** teaches parsing the netlist to create representational netlist comprising an array of objects, each object containing information about an associated element of the netlist; changing the representational netlist according to the set of changes; and converting the representational netlist into a hardware description language (Pages 12 and 13, Para 0205), because that allows storing information on terminal load-driving capacity, netlist information and element information and converting the netlist into HDL either collectively at a time or divisionally by a plurality of times (Pages 12 and 13, Para 0205). It would have been obvious to one of ordinary skill in the art at

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the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Takeyama et al.** that included parsing the netlist to create representational netlist comprising an array of objects, each object containing information about an associated element of the netlist; changing the representational netlist according to the set of changes; and converting the representational netlist into a hardware description language. The artisan would have been motivated because that would allow storing information on terminal load-driving capacity, netlist information and element information and converting the netlist into HDL either collectively at a time or divisionally by a plurality of times.

Per Claim 10: **Baxter et al.** teaches that the changes module contains an instance modifier associated with an instance, the instance modifier indicating a change in the connection of a particular port of the instance (CL2, L33-37).

7.6 As per claim 11, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim 1. **Baxter et al.** does not expressly teach that the changes module contains an attribute modifier associated with a netlist element, the attribute modifier indicating a change in one or more attributes associated with the netlist element. **Takeyama et al.** teaches that the changes module contains an attribute modifier associated with a netlist element, the attribute modifier indicating a change in one or more attributes associated with the netlist element (Page 26, Para 0418), because that allows the HDL annotator to write a netlist with the modified information into the source code (Page 26, Para 0412). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of

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Takeyama et al. that included the changes module containing an attribute modifier associated with a netlist element, the attribute modifier indicating a change in one or more attributes associated with the netlist element. The artisan would have been motivated because that would allow the HDL annotator to write a netlist with the modified information into the source code.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Baxter et al.** (U.S. Patent 6,625,787) in view of **Takeyama et al.** (U.S. Patent Application 2002/0083398), and further in view of **Lee et al.** (U.S. Patent Application 2001/0138817) and **Mohan et al.** (U.S. Patent Application 2001/0001881).

8.1 As per claim 6, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim

1. **Baxter et al.** does not expressly teach that the changes module comprises hardware description language syntax. **Mohan et al.** teaches that the changes module comprises hardware description language syntax (Page 1, Para 0009; Page 10, Para 0172), because that allows entering the design hierarchically and changing the design easily and with incremental design (Page 1, Para 0009; Page 10, Para 0172). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Mohan et al.** that included the changes module comprising hardware description language syntax. The artisan would have been motivated because that would allow entering the design hierarchically and changing the design easily and with incremental design.

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9. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baxter et al.** (U.S. Patent 6,625,787) in view of **Takeyama et al.** (U.S. Patent Application 2002/0083398), and further in view of **Lee et al.** (U.S. Patent Application 2001/0138817) and **Dupenloup** (U.S. Patent 6,836,877).

9.1 As per claim 7, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim 1. **Baxter et al.** does not expressly teach that using the changes module to modify at least one of the netlist modules is performed by a netlist compiler. **Dupenloup** teaches that using the changes module to modify at least one of the netlist modules is performed by a netlist compiler (CL19, L57-61), because that allows the compiler to parse the changes module and create a binary file including the changes to the netlist; the modified netlist is then built from the binary files (CL19, L57-61). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Dupenloup** that included using the changes module to modify at least one of the netlist modules being performed by a netlist compiler. The artisan would have been motivated because that would allow the compiler to parse the changes module and create a binary file including the changes to the netlist; the modified netlist would be built from the binary files.

9.2 As per claim 12, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim 1. **Baxter et al.** does not expressly teach that the changes module contains a port modifier associated with a netlist element, the port modifier indicating a change in a port configuration of the netlist element. **Dupenloup** teaches that the changes module contains a port modifier

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associated with a netlist element, the port modifier indicating a change in a port configuration of the netlist element (CL70, L21-31), because that allows setting the initial configuration of the I/O ports of the modules based on default constraints and then adjusting the port configurations based on actual constraints based on the netlist created (CL70, L21-31). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Dupenloup** that included the changes module containing a port modifier associated with a netlist element, the port modifier indicating a change in a port configuration of the netlist element. The artisan would have been motivated because that would allow setting the initial configuration of the I/O ports of the modules based on default constraints and then adjusting the port configurations based on actual constraints based on the netlist created.

10. Claims 8, 13, 14 and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baxter et al.** (U.S. Patent 6,625,787) in view of **Takeyama et al.** (U.S. Patent Application 2002/0083398), and further in view of **Lee et al.** (U.S. Patent Application 2001/0138817) and **Wikle et al.** (U.S. Patent 5,610,832).

10.1 As per claim 8, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim 1. **Baxter et al.** does not expressly teach that using the changes module further comprises modifying a port configuration of a wire. **Wikle et al.** teaches that using the changes module further comprises modifying a port configuration of a wire (CL5, L1-13), because that allows adding/modifying connections between ports of the circuit elements (CL5, L7-10). It would

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have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Wikle et al.** that included using the changes module further comprising modifying a port configuration of a wire. The artisan would have been motivated because that would allow adding/modifying connections between ports of the circuit elements.

10.2 As per claim 13, **Baxter et al.** teaches a method for editing a netlist (CL9, L3-17; Fig. 5A, Item 512).

Baxter et al. does not expressly teach providing a netlist comprising a set of netlist modules. **Takeyama et al.** teaches providing a netlist comprising a set of netlist modules (Page 12, Para 0185 and Para 0186), because the circuit information is written in a hardware description language for each processed unit and placed in the circuit information database, for each hierarchical layer; each hierarchical layer has a netlist associated and the logic gates contained therein (Page 12, Para 0185 and Para 0186). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Takeyama et al.** that included providing a netlist comprising a set of netlist modules. The artisan would have been motivated because the circuit information would be written in a hardware description language for each processed unit and placed in the circuit information database, for each hierarchical layer; each hierarchical layer would have a netlist associated and the logic gates contained therein.

Baxter et al. does not expressly teach creating a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist. **Lee et al.** teaches creating a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist (Page 3, Para 0035; Fig. 2, Item 214), because that allows specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist (Page 3, Para 0035). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Lee et al.** that included creating a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist. The artisan would have been motivated because that would allow specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist.

Baxter et al. does not expressly teach the at least one change including a change in a port configuration of a wire in the netlist. **Wikle et al.** teaches the at least one change including a change in a port configuration of a wire in the netlist (CL5, L1-13), because that allows adding/modifying connections between ports of the circuit elements (CL5, L7-10). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Wikle et al.** that included the at least one change including a change in a port configuration of a wire in the netlist. The artisan would have

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been motivated because that would allow adding/modifying connections between ports of the circuit elements.

10.3 As per claim 14, **Baxter et al.**, **Takeyama et al.**, **Lee et al.** and **Wikle et al.** teach the method of claim 13. **Baxter et al.** does not expressly teach that using the changes module further comprises modifying a port configuration of a wire. **Wikle et al.** teaches that using the changes module further comprises modifying a port configuration of a wire (CL5, L1-13), because that allows adding/modifying connections between ports of the circuit elements (CL5, L7-10). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Wikle et al.** that included using the changes module further comprising modifying a port configuration of a wire. The artisan would have been motivated because that would allow adding/modifying connections between ports of the circuit elements.

10.4 As per claim 16, **Baxter et al.**, **Takeyama et al.**, **Lee et al.** and **Wikle et al.** teach the method of claim 13. **Baxter et al.** does not expressly teach that the changes module contains a definitional modifier associated with at least one of the netlist modules, the definitional modifier indicating a change in the associated netlist module or instantiation of a module within the associated netlist module. **Lee et al.** teaches that the changes module contains a definitional modifier associated with at least one of the netlist modules, the definitional modifier indicating a change in the associated netlist module or instantiation of a module within the associated netlist module (Page 3, Para 0035; Fig. 2, Item 214), because that allows specifying the modifying

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information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist (Page 3, Para 0035). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Lee et al.** that included the changes module containing a definitional modifier associated with at least one of the netlist modules, the definitional modifier indicating a change in the associated netlist module or instantiation of a module within the associated netlist module. The artisan would have been motivated because that would allow specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist.

10.5 As per claim 17, **Baxter et al.**, **Takeyama et al.**, **Lee et al.** and **Wikle et al.** teach the method of claim 13. **Baxter et al.** does not expressly teach that the changes module contains an attribute modifier associated with a netlist element, the attribute modifier indicating a change in one or more attributes associated with the netlist element. **Takeyama et al.** teaches that the changes module contains an attribute modifier associated with a netlist element, the attribute modifier indicating a change in one or more attributes associated with the netlist element (Page 26, Para 0418), because that allows the HDL annotator to write a netlist with the modified information into the source code (Page 26, Para 0412). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Takeyama et al.** that included the changes module containing an attribute modifier associated with a netlist element, the attribute modifier indicating a change in one or more attributes associated with the netlist element. The artisan would have been motivated

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because that would allow the HDL annotator to write a netlist with the modified information into the source code.

Per Claim 18: **Baxter et al.** teaches that the changes module contains an instance modifier associated with an instance, the instance modifier indicating a change in the connection of a particular port of the instance (CL2, L33-37).

11. Claims 9 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Baxter et al.** (U.S. Patent 6,625,787) in view of **Takeyama et al.** (U.S. Patent Application 2002/0083398), and further in view of **Lee et al.** (U.S. Patent Application 2001/0138817), **Wikle et al.** (U.S. Patent 5,610,832) and **Dane et al.** (U.S. Patent Application 2002/0129334).

11.1 As per claim 9, **Baxter et al.**, **Takeyama et al.** and **Lee et al.** teach the method of claim 1. **Baxter et al.** does not expressly teach that using the changes module further comprises modifying a port configuration of a wire. **Wikle et al.** teaches that using the changes module further comprises modifying a port configuration of a wire (CL5, L1-13), because that allows adding/modifying connections between ports of the circuit elements (CL5, L7-10). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Wikle et al.** that included using the changes module further comprising modifying a port configuration of a wire. The artisan would have been motivated because that would allow adding/modifying connections between ports of the circuit elements.

Baxter et al. does not expressly teach that using the changes module further comprises modifying a port configuration of a wire at different hierarchical levels of the netlist. **Dane et al.** teaches that using the changes module further comprises modifying a port configuration of a wire at different hierarchical levels of the netlist (Page 1, Para 0004), because dividing the design vertically in a hierarchical manner, makes each level of hierarchy less complex and less prone to development errors (Page 1, Para 0003 and Para 0004). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Dane et al.** that included using the changes module further comprising modifying a port configuration of a wire at different hierarchical levels of the netlist. The artisan would have been motivated because dividing the design vertically in a hierarchical manner, would make each level of hierarchy less complex and less prone to development errors.

11.2 As per claim 15, **Baxter et al.**, **Takeyama et al.**, **Lee et al.** and **Wikle et al.** teach the method of claim 13. **Baxter et al.** does not expressly teach that using the changes module further comprises modifying a port configuration of a wire. **Wikle et al.** teaches that using the changes module further comprises modifying a port configuration of a wire (CL5, L1-13), because that allows adding/modifying connections between ports of the circuit elements (CL5, L7-10). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Wikle et al.** that included using the changes module further comprising modifying a port configuration of a wire. The artisan would have been motivated because that would allow adding/modifying connections between ports of the circuit elements.

Baxter et al. does not expressly teach that using the changes module further comprises modifying a port configuration of a wire at different hierarchical levels of the netlist. **Dane et al.** teaches that using the changes module further comprises modifying a port configuration of a wire at different hierarchical levels of the netlist (Page 1, Para 0004), because dividing the design vertically in a hierarchical manner, makes each level of hierarchy less complex and less prone to development errors (Page 1, Para 0003 and Para 0004). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Dane et al.** that included using the changes module further comprising modifying a port configuration of a wire at different hierarchical levels of the netlist. The artisan would have been motivated because dividing the design vertically in a hierarchical manner, would make each level of hierarchy less complex and less prone to development errors.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Baxter et al.** (U.S. Patent 6,625,787) in view of **Takeyama et al.** (U.S. Patent Application 2002/0083398), and further in view of **Lee et al.** (U.S. Patent Application 2001/0138817), **Wikle et al.** (U.S. Patent 5,610,832) and **Mohan et al.** (U.S. Patent Application 2001/0001881).

12.1 As per claim 19, **Baxter et al.**, **Takeyama et al.**, **Lee et al.** and **Wikle et al.** teach the method of claim 13. **Baxter et al.** does not expressly teach that the changes module comprises hardware description language syntax. **Mohan et al.** teaches that the changes module comprises hardware description language syntax (Page 1, Para 0009; Page 10, Para 0172), because that allows entering the design hierarchically and changing the design easily and with incremental

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design (Page 1, Para 0009; Page 10, Para 0172). It would have been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Baxter et al.** with the method of **Mohan et al.** that included the changes module comprising hardware description language syntax. The artisan would have been motivated because that would allow entering the design hierarchically and changing the design easily and with incremental design.

13. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Takeyama et al.** (U.S. Patent Application 2002/0083398) in view of **Lee et al.** (U.S. Patent Application 2001/0138817).

13.1 As per claim 20, **Takeyama et al.** teaches a computer-readable medium comprising program instructions (Fig. 1; Page 1, Para 0002; Page 11, Para 0182 to Para 0184; Page 12, Para 0185 to Para 0186); for performing receiving a netlist comprising a set of netlist modules (Page 12, Para 0185 and Para 0186).

Takeyama et al. does not expressly teach receiving a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist. **Lee et al.** teaches receiving a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist (Page 3, Para 0035; Fig. 2, Item 214), because that allows specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist (Page 3, Para 0035). It would have

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been obvious to one of ordinary skill in the art at the time of Applicants' invention to modify the method of **Takeyama et al.** with the method of **Lee et al.** that included receiving a changes module describing at least one change to the netlist modules; and using the changes module to modify at least one of the netlist modules according to the at least one change to create a modified netlist. The artisan would have been motivated because that would allow specifying the modifying information in a netlist modifier module and modifying the netlist according to that information to obtain a modified netlist.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kandasamy Thangavelu whose telephone number is 571-272-3717. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Picard, can be reached on 571-272-3749. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to TC 2100 Group receptionist: 571-272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'K. Thangavelu', with a large, stylized flourish at the end.

K. Thangavelu
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August 5, 2005